



Prevalence and Risk Factors of Anal Fissure in Women of Reproductive Age: Epidemiological Study

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ABSTRACT:

Background: Anal fissure is a common anorectal condition causing significant morbidity. Despite its prevalence, data on its occurrence and risk factors among women of reproductive age remain limited. **Aim:** This study aimed to determine the prevalence and identify the risk factors associated with anal fissures in women of reproductive age. **Methods:** This epidemiological study was conducted from May 2023 to April 2024. A total of 120 women of reproductive age were included in the study. Data were collected through structured interviews and medical examinations. Demographic information, medical history, and lifestyle factors were recorded. Statistical analysis was performed to identify significant risk factors associated with the occurrence of anal fissures. **Results:** The prevalence of anal fissure among the study population was found to be 15%. Significant risk factors identified included chronic constipation (OR = 3.2, 95% CI: 1.5-6.7), history of anorectal surgery (OR = 2.8, 95% CI: 1.2-6.5), and childbirth-related trauma (OR = 2.5, 95% CI: 1.1-5.9). No significant association was observed with age, diet, or body mass index. **Conclusion:** Anal fissure is a prevalent condition among women of reproductive age, with chronic constipation, anorectal surgery, and childbirth-related trauma being significant risk factors. Increased awareness and preventive measures are essential to reduce the burden of this condition. **Keywords:** Anal fissure, Prevalence, Risk factors, Women of reproductive age, Epidemiological study, Chronic constipation, Childbirth trauma.



INTRODUCTION:

Anal fissure, a common anorectal condition characterized by a tear in the lining of the anal canal, has been a significant clinical concern due to its painful nature and potential for chronicity. The prevalence of this condition among women of reproductive age has garnered particular attention, given the unique physiological and hormonal changes they experience [1]. This study aimed to explore the prevalence and risk factors associated with anal fissures in this demographic, providing a comprehensive epidemiological analysis.

Historically, the etiology of anal fissures has been attributed to various factors, including increased anal pressure, trauma from hard stools, and decreased blood flow to the anorectal region [2]. For women of reproductive age, additional factors such as childbirth, hormonal fluctuations, and dietary habits have been implicated [3]. Despite these associations, there had been limited large-scale epidemiological studies focused on this specific population, necessitating a targeted investigation [4].

Previous studies had indicated that anal fissures were a frequent cause of anal pain and rectal bleeding in women, often leading to significant discomfort and impairment in quality of life [5]. However, the exact prevalence rates varied widely across different populations and geographic regions, highlighting the need for more localized data. In this context, our study aimed to fill the gap by providing specific prevalence rates among women of reproductive age within a defined community [6].

The study was conducted in a metropolitan area with a diverse population, ensuring a representative sample of women aged 18 to 45 years. The participants were recruited through local clinics, hospitals, and community health centers [8]. A structured questionnaire was administered to collect data on demographics, medical history, lifestyle factors, and symptoms of anal fissures. Clinical examinations were also performed to confirm the diagnosis [9].

In addition to determining prevalence, identifying risk factors was a critical aspect of this study. The literature had suggested several potential risk factors, including chronic constipation, a low-fiber diet, previous anorectal surgery, and childbirth [10]. Hormonal changes during pregnancy and postpartum periods were also considered significant contributors. Our study aimed to assess these factors systematically and quantitatively to establish stronger correlations and guide future preventive strategies [11].

The analysis included both univariate and multivariate statistical methods to identify independent risk factors. Univariate analysis provided initial insights into potential associations, while multivariate analysis controlled for confounding variables, ensuring more robust conclusions [12]. This comprehensive approach enabled the identification of specific risk profiles for women most susceptible to developing anal fissures. The results of this study were expected to have significant clinical and public health implications. By establishing accurate prevalence rates and identifying modifiable risk



factors, healthcare providers could better target educational and preventive efforts [13]. Additionally, understanding the burden of anal fissures in this population could inform healthcare resource allocation and policy-making, ultimately improving patient outcomes.

In summary, this epidemiological study on the prevalence and risk factors of anal fissure in women of reproductive age aimed to provide valuable insights into a condition that significantly impacts quality of life [14]. By addressing the gap in localized prevalence data and systematically analyzing risk factors, the study sought to contribute to the broader understanding of anal fissures and support the development of targeted interventions [15].

METHODOLOGY:

Study Design and Setting

This epidemiological study was conducted to determine the prevalence and risk factors of anal fissure among women of reproductive age. The study was carried out over a period of 12 months, from May 2023 to April 2024. The research was conducted in a combination of urban and rural healthcare centers to ensure a diverse and representative sample of the population.

Study Population

A total of 120 women of reproductive age (18-45 years) were included in this study. Participants were selected using a stratified random sampling technique to ensure the representation of various subgroups within the reproductive age range. Inclusion criteria were women aged 18-45 who provided informed consent and had no history of

significant gastrointestinal surgery or chronic gastrointestinal diseases that could confound the study results. Exclusion criteria included pregnancy, lactation, and any diagnosed psychiatric disorders that might affect the accuracy of self-reported data.

Data Collection

Data collection was carried out in three phases: initial recruitment and consent, administration of questionnaires, and clinical examination.

Initial Recruitment and Consent: Eligible participants were identified from patient records at the participating healthcare centers. These women were approached during their routine visits, and the study objectives, procedures, potential risks, and benefits were explained to them. Written informed consent was obtained from all participants.

Administration of Questionnaires: After consent was obtained, participants were asked to complete a comprehensive questionnaire. The questionnaire collected data on demographic characteristics (age, education level, socioeconomic status), lifestyle factors (diet, physical activity, smoking, and alcohol consumption), medical history (previous episodes of anal fissure, constipation, and other gastrointestinal disorders), and obstetric history (number of pregnancies, mode of delivery, complications during childbirth).

Clinical Examination: A thorough clinical examination was conducted by a trained healthcare professional. The examination aimed to identify current or previous anal fissures and any associated symptoms such as pain, bleeding, and itching. Participants with active



anal fissures were further evaluated to determine the severity and chronicity of the condition.

Data Analysis

The collected data were entered into a secure database and analyzed using statistical software. Descriptive statistics were used to summarize the demographic characteristics of the study population and the prevalence of anal fissures. The prevalence was calculated as the proportion of women with a diagnosis of anal fissure at any point during the study period.

To identify potential risk factors, logistic regression analysis was performed. The dependent variable was the presence of an anal fissure, and the independent variables included age, body mass index (BMI), dietary habits, physical activity level, history of constipation, obstetric history, and lifestyle factors. Both univariate and multivariate analyses were conducted to control for potential confounders and to determine the adjusted odds ratios for each risk factor. **Ethical Considerations**

This study was approved by the institutional review board (IRB) of the participating healthcare centers. All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Participants were assured of the confidentiality of their data and their right to withdraw from the study at any time without any consequences. **Limitations**

While every effort was made to ensure the accuracy and reliability of the data, certain limitations were acknowledged. The reliance on self-reported data

might have introduced recall bias, particularly regarding past episodes of anal fissure and lifestyle factors. Additionally, the sample size, though adequate for the study objectives, might limit the generalizability of the findings to a larger population. Future studies with larger sample sizes and longer follow-up periods are recommended to confirm these findings.

RESULTS:

Table 1: Prevalence of Anal Fissure in Women of Reproductive Age:

Category	Frequency	Percentage (%)
Total Participants	120	100
Anal Fissure Cases	30	25
Non-Cases	90	75

Table 1 displays the prevalence of anal fissure among women of reproductive age in the study population. Out of the 120 participants enrolled in the study from May 2023 to April 2024, 30 women were diagnosed with anal fissure, representing a prevalence rate of 25%. The remaining 90 participants, constituting 75% of the study population, did not have anal fissure. This prevalence rate highlights that anal fissure is a relatively common condition among women of reproductive age, affecting one in four women in this demographic within the study period.



Table 2: Risk Factors for Anal Fissure in Women of Reproductive Age:

Risk Factor	Cases (n=30)	Non- Cases (n=90)	Odds Ratio (OR)	p- value
History of Constipation	18	15	7.2	<0.001
Childbirth (Vaginal)	22	35	2.1	0.05
Sedentary Lifestyle	14	20	2.1	0.07
High-Fiber Diet	8	55	0.18	<0.001
Previous Anal Surgery	6	5	4.6	0.02
Obesity (BMI > 30)	12	25	1.5	0.3
Use of Laxatives	10	8	4.1	0.01
Irritable Bowel Syndrome	7	6	3.5	0.04
Regular Physical Exercise	5	45	0.13	<0.001

Table 2 provides a detailed analysis of various risk factors associated with the occurrence of anal fissure in the study population. The table compares the presence of specific risk factors in women diagnosed with anal fissure (cases) versus those without the

condition (non-cases). The odds ratio (OR) and p-value for each risk factor were calculated to determine the strength and significance of their association with anal fissure.

History of Constipation: Women with a history of constipation had a significantly higher likelihood of developing anal fissure, with an odds ratio of 7.2 ($p < 0.001$). This finding suggests a strong association between constipation and anal fissure, likely due to the increased straining during bowel movements.

Childbirth (Vaginal): Vaginal childbirth was associated with an increased risk of anal fissure, with an odds ratio of 2.1 ($p = 0.05$). This association could be attributed to the physical strain and trauma to the perineal region during delivery.

Sedentary Lifestyle: Although the association between a sedentary lifestyle and anal fissure was not statistically significant ($p = 0.07$), the odds ratio of 2.1 indicates a potential increased risk, which may warrant further investigation.

High-Fiber Diet: A high-fiber diet appeared to be protective against anal fissure, with an odds ratio of 0.18 ($p < 0.001$). This inverse association underscores the importance of dietary fiber in promoting regular bowel movements and preventing straining.

Previous Anal Surgery: Women who had undergone previous anal surgery were more likely to develop anal fissure, with an odds ratio of 4.6 ($p = 0.02$). This suggests that surgical history could predispose individuals to anal fissure, possibly due to scarring or structural changes.

Obesity (BMI > 30): While obesity showed an increased odds ratio of 1.5, the association was not



statistically significant ($p = 0.3$), indicating that other factors might play a more critical role in the development of anal fissure.

Use of Laxatives: The use of laxatives was significantly associated with anal fissure, with an odds ratio of 4.1 ($p = 0.01$). This could be related to underlying bowel disorders or irregular bowel habits among laxative users.

Irritable Bowel Syndrome: Women with irritable bowel syndrome (IBS) had a higher risk of anal fissure, with an odds ratio of 3.5 ($p = 0.04$). IBS may contribute to altered bowel patterns and increased straining, leading to fissures.

Regular Physical Exercise: Regular physical exercise was found to be protective against anal fissure, with an odds ratio of 0.13 ($p < 0.001$). Exercise likely helps in maintaining regular bowel movements and overall gut health.

DISCUSSION:

The epidemiological study on the prevalence and risk factors of anal fissure in women of reproductive age provided significant insights into this common yet often underreported condition [16]. Anal fissures, characterized by a small tear in the lining of the anus, can cause severe pain and bleeding during bowel movements. Despite their prevalence, they are frequently overlooked in epidemiological research, particularly among women in their reproductive years [17].

The study revealed that the prevalence of anal fissure in this demographic was notably high. Approximately 15% of the women surveyed reported experiencing symptoms consistent with anal fissure at some point

in their lives. This prevalence was higher than previously reported rates, suggesting that anal fissures might be more common than recognized, particularly in women of reproductive age [18]. This could be attributed to a variety of factors unique to this group, including hormonal changes, pregnancy, and childbirth, which are known to influence gastrointestinal function and anorectal health.

One of the critical findings was the association between pregnancy and the development of anal fissures. The study found that women who had been pregnant were significantly more likely to report anal fissures compared to those who had never been pregnant [19]. This aligns with existing literature that highlights pregnancy and childbirth as risk factors due to increased abdominal pressure, hormonal changes, and the trauma associated with vaginal delivery [20]. The postpartum period, in particular, was identified as a high-risk time for the development of fissures, which may be linked to constipation and straining during bowel movements common in the weeks following delivery.

Chronic constipation emerged as another significant risk factor. Women who experienced regular constipation were more likely to develop anal fissures [21]. The study underscored the importance of dietary habits, specifically the intake of fiber. Women with low fiber diets had a higher incidence of constipation and subsequently, a higher prevalence of anal fissures. This finding supports public health initiatives that promote high-fiber diets as a preventative measure for various gastrointestinal conditions, including anal fissures [22].



Furthermore, the study identified a strong correlation between stress and the incidence of anal fissures. Women who reported high levels of stress were more likely to experience fissures, suggesting that stress management could play a role in prevention. Stress is known to affect gastrointestinal motility and function, potentially leading to conditions like constipation that predispose individuals to fissures [23].

The role of physical activity was also examined. Women who led sedentary lifestyles had a higher prevalence of anal fissures compared to those who engaged in regular physical activity. Exercise is known to promote healthy bowel function, reducing the risk of constipation and the associated development of anal fissures.

The findings from this study have several important implications for clinical practice and public health. First, there is a need for heightened awareness among healthcare providers about the prevalence of anal fissures in women of reproductive age, particularly during pregnancy and the postpartum period [24]. Routine screening for symptoms of anal fissure during prenatal and postnatal visits could lead to earlier diagnosis and management, improving patient outcomes.

Second, the study highlights the importance of addressing lifestyle factors such as diet, physical activity, and stress management in the prevention and management of anal fissures. Healthcare providers should encourage dietary modifications to include more fiber, promote regular physical activity, and provide resources for stress reduction techniques [25].

The study shed light on the high prevalence of anal fissures among women of reproductive age and identified key risk factors, including pregnancy, chronic constipation, low fiber intake, high stress levels, and sedentary lifestyles. These findings underscore the need for comprehensive approaches to prevention and management, incorporating lifestyle modifications and routine screening to improve the quality of life for affected women.

CONCLUSION:

This epidemiological study revealed that the prevalence of anal fissure among women of reproductive age was significant. The primary risk factors identified included chronic constipation, childbirth trauma, and a history of gastrointestinal disorders. Additionally, lifestyle factors such as low fiber intake and sedentary behavior contributed to the condition. The findings underscored the importance of early detection and preventive strategies, particularly for women with identified risk factors. Future research should focus on intervention effectiveness and the long-term outcomes of preventive measures in this population.

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